SECRET
(When Filled In)

R & D CATALOG FORM

DATE: 13 June 1966

1. PROJECT TITLE/CODE NAME: Photo Bleach Photography

2. SHORT PROJECT DESCRIPTION: A follow-on study directed twoard producing a non-silver photographic duplicating material to replace conventional wet silver-halide systems.

25X1

5. CLASS OF CONTRACTOR: Manufacturer

6. TYPE OF CONTRACT:

7. FUNDS: FY 19 $

8. REQUISITION NO.:

9. BUDGET PROJECT NO.: NP-R-1-7073

25X1

10. EFFECTIVE CONTRACT DATE (Begin - end): FY 1967 / FY 1968

11. SECURITY CLASS.: AA-Confidential T-Unclassified W-Unclassified

25X1

12. RESPONSIBLE DIRECTORATE/OFFICE/PROJECT OFFICER TELEPHONE EXTENSION: DDI/NPIC/P&DS/

13. REQUIREMENT/AUTHORITY: Required as a dry, immediate-readout photographic medium to replace the cumbersome, time-consuming, conventional silver processes.

14. TYPE OF WORK TO BE DONE: Applied Research

15. CATEGORIES OF EFFORT

MAJOR CATEGORY	SUB-CATEGORIES
Reproduction Techniques & Materials	Dry Film

16. END ITEM OR SERVICES FROM THIS CONTRACT/IMPROVEMENT OVER CURRENT SYSTEM, EQUIPMENT, ETC.: Monthly reports and a final report.

17. SUPPORTING OR RELATED CONTRACTS (Agency & Other)/COORDINATION: Project has been coordinated with Army, Navy, AF, and DOD.

18. DESCRIPTION OF INTELLIGENCE REQUIREMENT AND DETAILED TECHNICAL DESCRIPTION OF PROJECT (Continue on additional page if required)

This is a continuation of an effort to produce a completely dry, black-and-white, continuous-tone photographic system that overcomes the recognized objectionable features of conventional silver-halide systems. The process currently under study is a polymer system containing components in molecular form which are capable of forming a colored dye image by electro-chemical reaction when exposed to light and rapid heat.

19. APPROVED BY AND DATE

OFFICE	DEPUTY DIRECTOR	DDCI

II. INTRODUCTION: THE NATURE OF THE PROCESS, ULTIMATE OBJECTIVES, AND PROBLEMS

A dry, non-reversible, continuous tone, high resolution heat fixed photographic process has been demonstrated in this Laboratory and is being intensively investigated. In this process, a film containing a deeply colored dye and a photosensitive reagent is bleached on exposure to light. On heating, the film is fixed so that it is no longer sensitive to light. In some cases, the heating process may also serve to increase the contrast of the film.

The ultimate objectives to be attained by the process can be summarized as follows:

1. Black and white (or colorless) film, with D_{max} = 3.0 or more over the visible region, and D_{min} = 0.05 or less.

2. Resolution capability of 400 line pairs/mm.

3. ASA speed equivalent to 0.1.

4. Ability to control the photographic characteristic curve so as to vary gamma from 0.8 to 2.5.

5. Material must be stable in storage, both before and after exposure, for periods greater than a year, at ordinary temperatures and humidity.

The achievement of each of these objectives is intimately connected with the nature of the process. The photographic process can be described in terms of the individual processes leading to each of these properties, and of the problems involved in the achievement of the objectives. Each of the properties of the film will be discussed in turn.

Optical Density. Many different dyes, of widely varying chemical structure, and of many different colors, have been shown to participate in the photoreaction. In some dyes, the result of the reaction is a change in color, rather than bleaching. As a result, many different combinations of color are available. An ultimate objective of the program is to develop a deep black dye which will bleach to a colorless material. The desired optical density range of the system is 3.0 for the unexposed dye to 0.05 for the completely bleached material. It should be noted that a positive original transparency will result in a positive copy, as light which gets through the light areas of the original will bleach and therefore produce light areas in the copy.

CATEGORY Reproduction

PFN 10017

TITLE Photo Bleach Photography

CONTRACTOR R&D Center

CONTRACT DATE 15 June 65

CONTRACT NO

MONIT

COST

25X1

25X1

WEEK ENDING

	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE
INSPECTION REPORTS TO O/L											
TRIPS											
MONTHLY REPORT FROM CONTR.											
INTERIM REPORT FROM CONTR.	NA										
INSTALL. INFO. FROM CONTR.	NA										
NPIC SITE PREPAR.	NA										
TEST SPEC APPVL.	NA										
OPER. MANUAL APPVL	NA										
MAINT. MANUAL APPVL	NA										
ACCEPT TEST-	NA										
EQUIP. DELIVERY	NA										
NPIC ACCEPT. TEST	NA										
FINAL REPORT FROM CONTR.											
FINAL EVAL REPORT											
COMPLETION											

REMARKS:

1. Time extension requested to 10 Nov
2.
3.
4.
5.
6.
7.
8.
9.
10.
11.

25X1

TITLE *Photo Bleach Phot[illegible]*

CONTRACTOR [redacted]

CONTRACT No. [redacted]

CATEGORY *Reproduction*

PFN *10017* 25X1

CONTRACT DATE *15 June 65*

MONIT [redacted]

COST [redacted]

WEEK ENDING

	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE
INSPECTION REPORTS TO O/L											
TRIPS											
MONTHLY REPORT FROM CONTR.											
INTERIM REPORT FROM CONTR.	NA										
INSTALL. INFO. FROM CONTR.	NA										
NPIC SITE PREPAR.	NA										
TEST SPEC APPVL.	NA										
OPER. MANUAL APPVL	NA										
M[illegible] MANUAL APPVL	NA										
ACCEPT TEST	NA										
EQUIP. DELIVERY	NA										
NPIC ACCEPT. TEST	NA										
FINAL REPORT FROM CONTR.											
FINAL EVAL REPORT											
Completion											

REMARKS:

[illegible] extention [illegible] 7.

8.

9.

10.

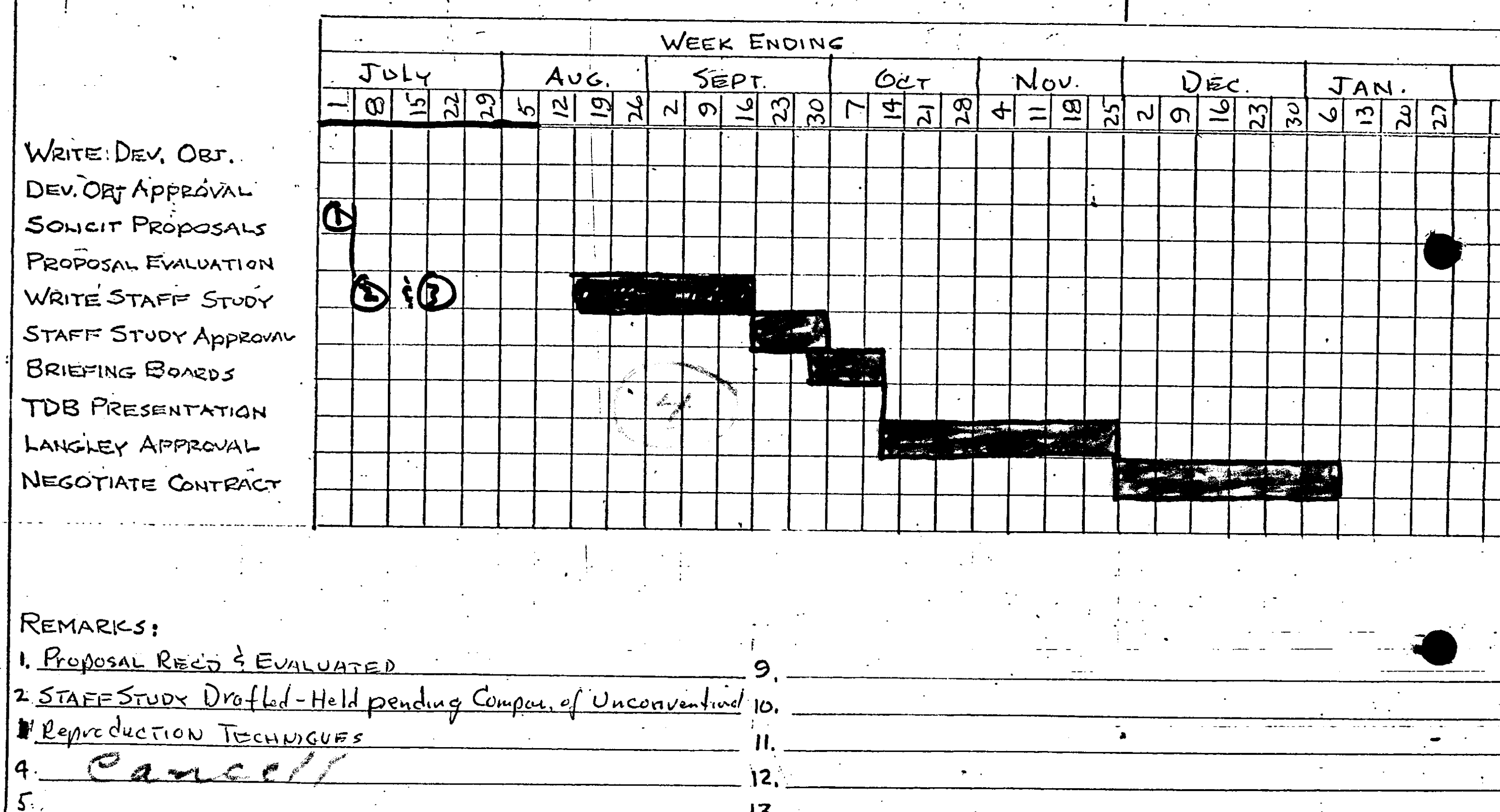
11.

Approved For Release 2005/06/06 : CIA-RDP78B04770A002800040025-2

PRECONTRACT ... SCHEDULE

TITLE PHOTO BLEACH PHOTOGRAPHY

CATEGORY REPRO... & MATL...
PFN 10017
DATE ASSIGNED
MONITOR [redacted] 25X



REMARKS:

1. Proposal Rec'd & Evaluated
2. Staff Study Drafted - Held pending Compar. of Unconventional
3. Reproduction Techniques
4. Cancel
5.
6.
7.
8.
9.
10.
11.
12.
13.
14.
15.
16.

1 December 1966

Dear Will:

On the occasion of your last visit here, you requested that we advise you informally of the Government property accountable on Task 02. The list of items is:

	Item	Original Cost
(1)	1 Log Linear Photometer with General Purpose Photomultiplier Housing Model 700L, [redacted]	[redacted]
(2)	1 [redacted] Monochrometer with Visible Region Grating Collective Lens	
(3)	1 Multi-Speed Gear Motor Model 6700-1S [redacted]	
(4)	1 Bird Vacuum Plate 9"x12" Model AG-3876	

25X1

25X1

25X1

25X1

The above information will be forwarded through regular channels on DD Form 543 and we will send you a copy when this is done.

You also asked that we consider supplying to you results of any future Company-sponsored work by [redacted] on this photoplastic process in return for your abandoning this equipment to us. Although [redacted] is interested in pursuing this work further, he is unable to make a definite commitment in this regard because of the pressures of other work planned for 1967. He is hopeful that he will be able to do some additional work and is agreeable to furnishing to you the results of any such work. In light of this, our answer to your question is that, if the equipment listed above is abandoned to us, we will keep you or your designee informed of the results of any work we perform on this process during the next eighteen months. Since I understand that you may not be associated with this project much longer, would you please provide us with a suitable address to which we should transmit any of the results obtained.

25X1

25X1

Sincerely,

[redacted]

25X1